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EXAMINER

CHANG, VICTOR S

ART UNIT

PAPER NUMBER

1788

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/551,124	<b>Applicant(s)</b> INOUE ET AL.	
	<b>Examiner</b> VICTOR S. CHANG	<b>Art Unit</b> 1788	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,6,14-18,20 and 28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,6,14-18,20 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### **Introduction**

1. Applicants' arguments and remarks filed on 2/1/2011 have been entered. Claims 1 and 28 have been amended. Claims 1, 6, 14-18, 20 and 28 are active.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Rejections not maintained are withdrawn.

### **Claim Rejections - 35 USC § 112**

4. Claims 1, 6, 14-18, 20 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, lines 2-3, the limitation "thickness varying from one region to another" is vague and indefinite. It is unclear what is the scope of "thickness variation" is being claimed. For the present Office action, based on applicants' provided support (see Remarks filed 12/11/2009, page 6), the intended scope of the claim language is interpreted as meaning the sound absorption layer has a thickness which arbitrarily varies from one region to another in a range not greater than 50 mm. See specification page 21 and Fig. 4. Clarification is required in the next reply.

### **Rejections based on Prior Art**

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5. Claims 1, 6, 14-18, 20 and 28 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lucca et al. (US 4966799), and evidenced by Flowers et al. (US 4131664).

Lucca's invention relates to a vehicle noise reducing element (sound insulator). See Abstract. The element can be used either as a sound screen without a holding frame (**first embodiment**), and also to be used as a sound-absorbing and sound-insulating bodywork part (second embodiment), which has sufficient compressive strength and without a supporting surface, in a modern plastic bodywork for motor vehicles. This allows the weight of the overall bodywork construction to be reduced considerably (ultra-light weight). See col. 1, ll. 63 to col. 2, ll. 5. Fig. 2 illustrates the noise reducing element contains a padding layer 21, a thermoplastic sheet layer 23, and a thin heat-sealable adhesive layer 27 between the layers 21 and 23. The padding layer is sound absorbing (sound absorption layer) and consists of a thermoformed fiber mat bonded with a thermoplastic. See col. 2, ll. 67-68. The thickness of the padding layer depends on the required sound absorption, i.e., the thickness is result effective for sound absorption. See col. 3, ll. 40-41. Useful fiber mat for the sound-absorbing layer 21 has a low density of 50-150 kg/m<sup>3</sup> (0.05-0.15 g/cm<sup>3</sup>). See col. 3, ll. 49-55. The thermoplastic sheet layer (air impermeable layer) consists of polypropylene. See col. 2, ll. 59 through col. 3, ll. 6. The thickness of the element can be adapted to specific use requirements. When the noise reducing element is used as a sound insulator and needs to have little mechanical stability (without a supporting surface) but good sound absorption, the element should possess a relatively thin thermoplastic sheet layer (air impermeable layer) and a comparatively thick padding layer (sound absorption layer). See col. 3, ll. 5-6. Figs. 1-3 show that all the layers are coextensive (the thin

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heat-sealable adhesive film layer 27 provides 100% adhesion area). Fig. 4 illustrates in a first embodiment application, the sound-absorbing lining 41 is installed between the engine space and the vehicle interior. The sound absorbing padding layer faces the engine space (source of noise). See col. 3, ll. 20-23.

For claims 1, 14, 15, 17, 18 and 28, Lucca is silent about the following structural features in the **second embodiment**: 1) the thickness of the sound absorption layer arbitrarily varies from one region to another, 2) the thickness of sound absorption layer, 3) the thickness and area-weight of the thermoplastic sheet layer (air-impermeable layer), 4) the adhesion peel strength between the sound-absorbing layer and the thermoplastic sheet layer, and 5) the sound absorption layer faces a vehicle body panel, and the air-impermeable layer faces vehicle interior. However, regarding 1), since the noise reducing element (which has sufficient compressive strength and without a supporting surface) is a component in a vehicle plastic bodywork, it infers that the noise reducing element is sandwiched as a core material between vehicle outer body panel and vehicle interior surface panel, and these outer panels of the bodywork are known to have uneven contours, which necessary results in the thickness of padding layer being arbitrarily varied from one region to another, as evidenced by Figs. 4-6 of Flowers's reference, which relates to an acoustical vehicle panel comprising a composite fibrous pad (noise reducing element) 50 comprising an impervious film 56 and fibrous layer (sound absorption layer) 54. A compression bar 110 compacting the fibrous layer 54 and varies its thickness locally. See col. 4, ll. 60 through col. 5, ll. 8; and col. 9, ll. 45-55. Absent any unexpected functional properties, a workable arbitrary thickness variation from one region to another is deemed to be either anticipated, or obviously provided by practicing the invention of Lucca, dictated by fitting

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between the contours of the vehicle body panels. It is noted that Flowers also teaches that fibrous pad 50 initial thickness is as low as about 1/4 inch up to about 2 1/2 inches or greater, while thicknesses ranging from about 3/4 inch to about 1 1/2 inches are usually preferred. See col. 6, ll. 7-11. The weight of the composite fibrous pad comprising the plural fibrous layers and film interposed therebetween may broadly range from as low as about 50 to as high as 500 grams per square foot, while weights including the binding agent incorporated therein of from about 100 grams to about 200 grams per square foot are usually preferred. See col. 6, ll. 17-23. Depending upon the specific material employed, the film 56 may range in thickness from about 1/2 mil (12.7  $\mu$ m) up to about 25 mils, with thicknesses of from about 1 to 5 mils (25.4 to 127  $\mu$ m) generally being preferred. See col. 8, ll. 35-39. Regarding 2), since Lucca teaches that the thickness of the padding layer is result effective for sound absorption, a workable range of thickness for vehicle body work is deemed to be either anticipated, or obviously provided by practicing the invention of prior art. Regarding 3), since Lucca renders the general structure and composition of the noise reducing element of the claimed invention either anticipated or obvious, and they are for the same end use, a workable thickness of the thermoplastic (air-impermeable) layer is also deemed to be either anticipated, or obviously provided by practicing the invention of prior art for the same end use as the claimed invention. As to the area-weight of the thermoplastic layer, it is merely an inherent property which inversely related to the thickness value of the thermoplastic layer. Regarding 4), similarly, since Lucca renders the general structure and composition of the noise reducing element of the claimed invention either anticipated or obvious, and they are for the same end use, a workable adhesion peel strength between the sound absorbing layer and the sheet layer is also deemed to be either anticipated, or

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obviously provided by practicing the prior art. Regarding 5), since Lucca teaches in a first embodiment application, the sound-absorbing lining 41 is installed between the engine space and the vehicle interior, and the sound absorbing padding layer faces the engine space (source of noise), orienting the padding layer in the second embodiment toward the outer vehicle body panel (source of noise) is also deemed to be either anticipated, or obviously provided by practicing the invention of prior art. Finally, regarding the “resonance” property of the air impermeable layer, absence of any distinct structure/composition feature, it is deemed to be inherent to the same structure/composition as the claimed invention.

For claims 6, 16 and 20, since Lucca’s noise reducing element has sufficient compressive strength as set forth above, a workable initial compression repulsive force is deemed to be either anticipated, or an obvious routine optimization to one of ordinary skill in the art, motivated by the desire to obtain the required strength for the same end use as the claimed invention.

### **Response to Arguments**

6. Applicants argue at Remarks page 8:

The ultra-light sound insulator of the present invention does not need to be dimensionally stable, does not need to itself form a structural element, and can have its thickness varied to adopt to the vehicle body panel to which it is applied. In contrast, because of the dimensionally stable supporting layer in Lucca et al., the structural element of Lucca et al. is intended to form a structural element that can be used without a holding frame or without a supporting surface.

However, applicants' arguments ignore that the second embodiment of Lucca’s invention is relied for the grounds of rejection. Similarly, applicants’ continued arguments throughout the

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remaining pages of the Remarks directed to Lucca's first embodiment of a structural element are misplaced and unpersuasive.

Applicants argue at page 9:

the sound screen of Lucca et al. should have a comparatively thick padding layer. That is, in the sound screen of Lucca et al., a high sound absorption rate cannot be assured when the thickness of the sound absorption layer is varied or reduced.

However, applicants appear to have confused the initial thickness of the noise reducing element with the variation in thickness after the element is assembled in a vehicle bodywork panel. Further, contrary to the evidence by Flowers, as set forth above, that desired noise reducing property is provided after assembling the noise reducing element in a bodywork panel, with the presence of local thickness variation caused by fitting the noise reducing element to the contours of the panels, applicants' argument is baseless.

Applicants argue at page 12:

In Lucca et al., adhesive strength and adhesive area of adhesive layers 15, 27, 35 against the supporting layers 12, 23, 32 are unclear. In general, an adhesive layer is not used or an adhesive layer having a small adhesive strength is used in an ultra-light sound insulator having a similar weight as the present invention. The lighter the sound insulator is, the simpler the adhesion method with less amount of adhesive material chosen in order to simplify the production process and to reduce the production cost. Thus an adhesion strength of less than 1 N/25mm and an adhesion area of not more than 20% are usually adopted for such an ultra-light sound insulator.

However, Lucca illustrates in Figs. 1-3 that all the layers are coextensive (the thin heat-sealable adhesive film layer 27 provides 100% adhesion area). Further, since Lucca renders the general structure and composition of the noise reducing element of the claimed invention either anticipated or obvious, and they are for the same end use, a workable adhesion peel strength between the sound absorbing layer and the sheet layer is also deemed to be either anticipated, or



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obviously provided by practicing the prior art. In the absence of any evidentiary support, applicants' arguments are speculative and baseless.

Pointing to the drawings at page 14, applicants argue at pages 15-17 regarding the function of the resonance layer has been considered, but unpersuasive. Specifically, the functional property of the components of the noise reducing layer is deemed to be inherent to the same structure and composition, which have been rendered either anticipated, or obviously provided by practicing Lucca's invention for the same end uses as the claimed invention. Moreover, the drawings fail to point out any structure/composition features of the claimed invention which are taught away by or necessarily absent from the teachings of prior art set forth above.

### **Conclusion**

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VICTOR S. CHANG whose telephone number is (571)272-1474. The examiner can normally be reached on 6:00 am - 4:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/  
Primary Examiner, Art Unit 1788